IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW MEXICO

DENNIS MURPHY, as Personal Representative of the ESTATE OF DANIEL TURNER, deceased, and WALTER and TAMARA TURNER,

Plaintiffs,

vs. CIVIL NO. 1:19-cv-00639 RB /JFR

THE CITY OF FARMINGTON, and JAMES PRINCE, JAMES MOORE, ZACK WOOD and JESSE GRIGGS, in their individual capacities,

Defendant.

Rule 26 Report of John Stein, M.D.

I am a board-certified physician in the field of Emergency Medicine, and have been practicing medicine since 1997. I was a faculty member and Vice Chair of the Department of Emergency Medicine at the University of California San Francisco for 12 years, and have since become the Chairman of the Department and Medical Director of the Department of Emergency Medicine at Sutter Santa Rosa Regional hospital and Sutter Lakeside Hospital for the past seven years.

I have been retained as a rebuttal expert in response to the report and testimony of the Defendants' expert, Dr. Gary Vilke, to review relevant materials and provide expert opinions on this matter as to whether the actions of the Farmington police officers caused or contributed to the death of Mr. Daniel Turner when the officers encountered him on June 27, 2018.

After careful review, it is my opinion to a reasonable degree of medical probability that that the officers' actions contributed to Mr. Turner's sudden death because they had a direct effect

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on the medical issues he was experiencing; their actions contributed to Mr. Turner's inability to manage the lactic acid build up in his body by constricting his ability to exhale CO2, and he succumbed because of it. Said another way, the conduct of the officers I observed in the video contributed to Mr. Turner's inability to manage his acidosis by restricting the exhalation of carbon dioxide, and thus played a part in his resultant death.

I have reviewed the following materials related to this case:

1. Pleadings filed in the United States District Court for the District of New Mexico:
    a. Complaint [Doc. 1], filed on July 15, 2019;
    b. Joint Status Report and Provisional Discovery Plan [Doc. 10] filed on September 30, 2019;
    c. Notice of Jury Selection and Trial [Doc. 17], filed on October 15, 2019.
2. Documents produced as part of Plaintiffs' Rule 26 Initial Disclosures:
    a. OMI Report No. 2018-03790 and case file regarding the death of Daniel Turner (Bates Nos. OMI000001-000055);
    b. Photographs taken by OMI (Bates Nos. OMI000056-000124);
    c. San Juan County Sheriff's Office ("SJCSO") Report No. 2018-28888 dated June 27, 2018 (Bates Nos. P000052-000064);
    d. San Juan County Communications Authority Call for Service Detail Report dated June 27, 2018 (Bates Nos. P000065-P000085);
    e. Scene photographs taken by SJCSO on June 27, 2018 (Bates Nos. P000086-000400);
    f. Audio recording of Walter Turner's 911 call on June 27, 2018 (Bates No. P000402);

g. Audio recording of SJCSO interviews with the Turner family on June 28, 2018 (Bates No. P000403);

h. Audio recording of SJCSO interview with Farmington Police Officer Zach Wood dated June 28, 2018 (Bates No. P000404);

i. San Juan Regional EMS records pertaining to Daniel Turner dated June 27, 2018 (Bates Nos. P000554-000560);

j. Video surveillance from Farmington Police Officers Price, Moore, Griggs, and Wood on June 27, 2018 (Bates Nos. P000405-000408);

3. Documents produced as part of Defendants' Rule 26 Initial Disclosures:

a. Video surveillance for Officers Prince and Griggs dated June 27, 2018 (Bates Nos. COF #27-32);

b. Farmington Fire Department Incident Report and Care Reports dated June 27, 2018 (Bates Nos. COF #33-48);

c. Farmington Police Department Supplements-Reports dated June 27, 2018 (Bates Nos. COF #49-65);

d. SJCSO In-Custody Reports (Bates Nos. COF #66-102);

e. Miscellaneous Farmington Police Department Investigation Documents (Bates Nos. COF #129-166);

4. Report by Defendants' expert, Dr. Gary Vilke, dated January 5, 2020, including Appendices A (Curriculum Vitae), B (List of cases in which Dr. Vilke has testified in the last 4 years), and C (Fee Schedule).

I have also reviewed the expert report of the Plaintiffs' police expert Roger Clark, as well as color copies of what have been represented to me to be officer training slides on the issue of positional asphysxia from the Farmington Police Department.

I have also reviewed medical and scientific literature relevant to Dr. Vilke's medical opinions and my own as follows:

- Strommer, Leith, Zeegers, Freeman. The role of restraint in fatal excited delirium: a research synthesis and pooled analysis. Forensic Science, Medicine and Pathology. July 2020, epub ahead of print.

- Barnett, Stirling, Pandayan. A review of the scientific literature related to the adverse impact of physical restraint: gaining a clearer understanding of the physiological factors involved in cases of restraint-related death. Medicine, Science, and the Law. 2012 Jul;52(3):137-42.

- Barnett, Stirling, Hanson, Pandyan. Physiological impact of upper limb position on prone restraint. Medicine, Science, and the Law. 2013 Jul ;53(3):161-5.

I agree with some of the medical conclusions drawn by Dr. Vilke and differ on others.

Prior to addressing Dr. Vilke's points summarized in five parts on page four of his report, I want to clarify some issues regarding terminology in order to make my conclusions set out below more clear. Positional asphyxia, to my understanding, is the legal terminology applied to incidents such as the one in this case, where the position of the victim did not allow for sufficient respiratory function, eventually causing death. Definitions of asphyxia in layperson's terms typically discuss a deprivation of oxygen as the cause. In medical terms, asphyxia is the interruption of normal breathing which leads to either a lack of oxygen or an excess of carbon dioxide, or both. If unabated, asphyxia can lead to unconsciousness and death. I do not believe the underlying medical condition that caused Mr. Turner to suffer a sudden cardiac arrest had to do with the deprivation

of oxygen to his system; rather, in my opinion, it involved his inability under the circumstances to sufficiently exhale carbon dioxide, which led to an increase in his acid level and the associated cardiovascular collapse that he suffered.

In his agitated state, Mr. Turner was already very ill. Countless patients present to Emergency Departments exhibiting similar characteristics, so this is a population that every ER doctor is familiar with. Patients who are agitated overuse their muscles, and in doing so, produce quite a large quantity of lactic acid. The same is true for anyone who is vigorously exercising. This buildup of acid can be easily measured with blood tests, and we frequently find significant levels of increased acid in patients similar to Mr. Turner when we look. This buildup of lactic acid would cause a significant problem to the human body if it were not countered with an adequate respiratory effort. The many vital proteins that drive the metabolic functioning within our system become ineffective if the acid level rises too high. Humans use their breathing function, and specifically their ventilatory function of eliminating carbon dioxide to balance this increasing acid production. Carbon dioxide is also an acid when circulating in the bloodstream. So whenever acid levels rise in the body, the respiratory system kicks into action, and the lungs eliminate carbon dioxide at a higher rate from the body, by maximizing the ventilatory drive, and thus balancing the acid level back towards normal. If left to function properly, humans can automatically make such adjustments as to remarkable abnormalities in the acid levels. However, if the ventilatory system is disrupted, there are frequently swift and lethal consequences. Thus, the issue for Mr. Turner was not one of oxygen, but one of carbon dioxide.

The buildup of acid (acidosis) is actually a common occurrence in medicine, which all emergency physicians have seen and treated numerous times across patient populations, not just in patients suffering from the effects of narcotics. Such situations range from infections and sepsis

to asthma and kidney failure. For all such individuals, however, the premise is the same: individuals who have acute acidosis rely on their ability to drive the acid level back towards normal by increasing their breathing and exhaling carbon dioxide. If the ability to maintain that balance is compromised, it can and does lead to cardiac arrest as seen in the OMI report on Mr. Turner. Many, if not all emergency physicians have caused or nearly caused patients to go into cardiac arrest in the process of attempting to take over the ventilatory function of someone with severe acidosis, and we are very well aware of how rapidly the clinical situation can deteriorate when acidosis becomes severe. Sometimes patients have reduced ventilatory function simply by slumping in their bed, but certainly any constraint on the patient's breathing due to being immobilized, or if additional weight or pressure is applied to the body, can reduce lung function as has been demonstrated in numerous clinical studies, even those performed by Dr. Vilke. In fact, restraining someone whose breathing has been compromised can worsen the effects of his or her condition because the individual is instinctively straining to move, which can involve extraordinary muscle exertion and in doing so exascerbate the issue by creating even higher levels of lactic acid, while having less ability to position one's self for optimal carbon dioxide exhalation.

I will take Dr. Vilke's points out of order as I think it follows more logically with my opinions regarding them and the underlying medical issues involved in this case.

In point 3 of his report, Dr. Vilke states that Mr. Turner was exhibiting clinical signs of methamphetamine usage, and possibly other mental health issues. I agree with Dr. Vilke's conclusion, based on the conduct I observed in the videos, the reports of Mr. Turner's conduct in the OMI report, and the toxicology on Mr. Turner. In my experience, having seen hundreds of cases of methamphetamine intoxication, Mr. Turner, prior to his encounter with the officers, was

displaying the signs and symptoms of methamphetamine ingestion, including increased movement, agitation, inability to sit still, inability to focus and erratic behavior.

In Point 4 of his report, Dr. Vilke states Mr. Turner's manner of death as being "a sudden cardiac arrest due to an enlarged heart along with the effects of methamphetamine and physiologic stress." I agree with this conclusion. The effects of methamphetamine, as discussed above, are causing the underlying problem of acidosis and once physiologic stress is added, acid production is increased even further. This acidosis is what caused the heart to fail and for the patient to have cardiac arrest.

While I fully agree with the OMI findings, and also agree with Dr. Vilke's agreement with the OMI points that he listed, I disagree with his partial summarization of the OMI findings and thus his attempt to create a partial conclusion regarding the cause of Mr. Turner's death by omitting what the OMI report clearly included as a contributing factor to his death, that is, the actions of the officers. I agree with the full OMI findings and disagree with Dr. Vilke's insofar as he excludes as a contributing cause of death the actions of the officers. I disagree with Dr. Vilke's conclusion in Point 1 of his report, that "the actions of the officers to control and restrain Mr. Turner did not cause or contribute to his cardiac arrest." I believe that the officers' actions *did* contribute to Mr. Turner's sudden death.

Prior to Mr. Turner's contact with the first officer on scene, what I observed in the videos was a fully functioning, if affected, man who was clearly in an excited state. This is substantially similar to patients I have seen hundreds of times in emergency rooms, in this affected state and in even more advanced and critical states – all of whom were treatable patients. The Mr. Turner I observed in the videos, even considering the underlying conditions exposed by the autopsy, does not show me a man near death.

What I observed that followed was that an officer arrived, Mr. Turner went to the ground and was on his back, the officer eventually struggled with Mr. Turner, and then struck him in the face more than once. After that, there were four officers at four points near or on Mr. Turner, and he quickly expired after that.

It is my medical opinion that the officers' involvement had a direct effect on the medical issues that Mr. Turner was experiencing.

It is my medical opinion that whether the officers merely held Mr. Turner in place, face down, so that the weight of his body restricted his own breathing, or applied any further force and weight on his body in addition, their actions contributed to Mr. Turner's inability to manage the lactic acid build up in his body by constricting his ability to exhale CO2, and that he succumbed because of it. Dr. Vilke describes how it is not possible that enough time elapsed for the oxygen levels to drop to a level low enough to cause death, and I agree with this. But what he omitted is how fast someone can go into cardiac arrest once their ventilatory effort of expelling carbon dioxide is stopped. The acidosis can rise rapidly, and cardiac arrest ensues. As an emergency physician, I have seen this happen in literally seconds after we paralyze and intubate patients that have severe acidosis from a large variety of conditions. This is the physiologic process that we are witnessing with Mr. Turner and the reason for his rapid demise.

I disagree with Dr. Vilke's definitive conclusion in Point 5 of his report, that "a 'recovery position' would not have prevented [Mr. Turner's] sudden cardiac arrest and death."

While it is possible that when the police first encountered Mr. Turner, his acidosis was advanced to the point that simply placing him face down into a prone position on his stomach and either pinning him or applying additional weight to him in order to handcuff him was enough to push Mr. Turner beyond his body's ability to rebalance his acid level, I find that to be unlikely.

Looking again to the video, I see Mr. Turner moving for over a minute after he is handcuffed. This indicates to me that his body is dealing with the acid imbalance, or at least straining to do so, though likely his efforts cannot overcome the increasing pH imbalance towards lethality. He does not yell out about difficulty breathing, because his consciousness was likely impaired by the repeated blows to his head. Nevertheless, it is my medical opinion that had Mr. Turner been turned to his side, on to his back or had he been sat up, there is a very high likelihood he would either have regained the ability to balance his acidosis, or at least he would have survived long enough for the proper interventions available to first responders and paramedics who arrived subsequently on scene.

In Point 2 of his report, Dr. Vilke expresses his disagreement with the opinions of the Plaintiffs' police practice and procedures expert Roger Clark on the police officers' use of force in this case. I have no training or experience in the use of force as a matter of police practice and procedure, though I have much training and experience in dealing with the results of it. Therefore, I cannot opine on Dr. Vilke's critique of a law enforcement expert's opinion regarding how officers come to know what positional asphyxia is, how that knowledge fits within or outside the national standard of the conduct of law enforcement officers or the training law enforcement officers receive on how their conduct may or may not create the danger of positional asphyxia in a particular individual in their custody.

However, from a medical standpoint, as set out above, I agree with the conclusion drawn by Mr. Clark, that the conduct of the officers I observed in the video contributed to Mr. Turner's inability to manage his acidosis by restricting the exhalation of carbon dioxide, and thus played a part in his resultant death.

Appendix A is a copy of my current Curriculum Vitae, which includes a list of all publications authored by me. Appendix B is a list of all cases in which I have testified as an expert in trial or deposition within the preceding four years. Appendix C is my fee schedule.

The knowledge base that I utilize has been developed over time from my years of clinical practice and experience, reading and training as well as research.

Under penalty of perjury, I hereby swear that the opinions stated above are true and correct within a reasonable degree of medical probability.

Done this 4th day of September, 2020.

John Stein, M.D.